COVID Related Original Research

Impact of the COVID-19 Pandemic on Mental Health: a cross sectional study

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ABSTRACT

Background: The Corona Virus Disease 2019 (COVID-19) appeared in Wuhan, China, escalates across the country and then a majority of the nations across the entire world between December 2019 and early 2020 and represents a challenge to psychological flexibility. This study aims at assessing the mental health of individuals during lockdown amid COVID-19 pandemic in India.
Methodology: Data was collected through an online survey during 3rd lockdown in the month of May 2020. In the analysis, 386 subjects were included. Participants completed a validated questionnaire that assessed the impact of Corona virus pandemic on their mental health.
Results: The study showed that there is a significant difference between the features of the depression like insomnia, restlessness and Irritable behaviour of people; anxiety and stress across gender, marital status, living status and employment status.
Conclusions: The COVID-19 pandemic and lockdown restrictions imposed upon people were associated with stressful impact in the study sample.

Keywords: Corona virus, mental health, stress, pandemic, COVID-19.

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INTRODUCTION

Starting in December 2019, number of patients of novel Corona Virus Disease – 2019 (COVID-19) with an increasing trend were identified in Wuhan, located in Central China [1-2]. The epidemic of COVID-19 was not only limited to China as of 20th January 2020, South Korea affirmed its first case of the disease [3] and by the 30th of January, the World Health Organization (WHO) had announced the outbreak of the COVID-19 as a global health emergency. The WHO admitted the spread of virus to countries beyond China and recognized the need for a better-coordinated international response to the outbreak [4-5]. COVID-19 was declared as a pandemic by the World Health Organization on 11th March 2020 [6]. Corona viruses, so named due to the peripheral envelope proteins looks like a crown ('corona' in Latin), are a family of enveloped RNA viruses [7]. As the virus was posing to be a global threat, online courses for awareness of healthcare workers around the world were started [8]. Funds were raised all around the world and Strategic Preparedness and Response Plan (SPRP) was set up intended to secure the states with weaker health systems. The targets were to confine transmission, provide early consideration, communicate key information and reduce social and economic impacts. Also, WHO concentrated on developing easy-to-apply diagnostics, hastening existing vaccine candidates and preventing infection [8]. The specific situation of lockdown in many parts of the world, which are contributing to great extend to the global economy has resulted in the

stopping of the services and products. This has led to an interruption in the global supply chains and thus, affected the global economy harshly [9].

Along with the economic impacts, the ever-increasing morbidity and mortality because of COVID-19 is the largest setback. The WHO report disclosed the mortality rate to be between 3–4 % [10]. In India, the first case was reported on 30th Jan 2020 and by 17th May 2020; India had reported 90927 cases and 2872 deaths [11]. As COVID-19 is a new disease and is having devastating consequences all around, its emergence and proliferation, causes confusion, anxiety and fear among the general population. Stigma and hatred are spread in the individuals because of fear [8].

The WHO has also conveyed its concern over the mental health and psycho-social consequences of COVID-19 pandemic [12]. It hypothesized that new measures such as self-isolation and quarantine have affected normal activities, routines, and livelihoods of individuals that can lead to an increase in loneliness, anxiety, depression, sleeping disorder, harmful alcohol, and drug use, and self-anguish or self-destructive behaviour [13]. The recent study by the Indian Psychiatric Society indicates a 20% percent boom in mental illnesses since the Corona virus outbreak in India [14]. Psychologists and mental health professionals speculate that the pandemic is going to impact the mental health of the population around the world with the rise of cases of depression, self-destruction, and self-harm, apart from other symptoms reported globally due to COVID-19 [15-17]. In the time of extensive usage of social media, the myths regarding prevention and management of infection along with fake news around corona are also spreading speedily. These are sometimes worrisome for certain individuals. Several sites, including WHO are thus providing genuine information [8].

Therefore, this study aims at assessing the mental health of individuals during lockdown amid Covid-19 pandemic in India. The objective of this study is to assess the prevalence of symptoms related to mental distress like depression, anxiety and stress across gender, age etc.

METHODOLOGY

This was a cross-sectional study carried out in India. In this study, A Snowball sampling technique was used. An online structured questionnaire with a consent form attached with it was developed by using Google forms. The link of the questionnaire was shared through various social networking platforms like Facebook, WhatsApp etc. The participants were motivated fill and roll out the survey to as many individuals as possible. On receiving and clicking the link of Google forms the participants got auto directed to the information about informed consent and the questionnaire. After they consented for the survey, they filled up the socio-demographic details. Then the several questions appeared sequentially, which the participants were to answer.

Participants having internet access could participate in this online study. As the Hindi is a national language of India, informed consent and questionnaire were made in Hindi Participants able to understand Hindi and willing to give informed consent were included in this study. The data collection was done during 3rd lockdown i.e. it was commenced on 4th May 2020 and closed on 17th May 2020. We could collect data from across different states of India. The socio-demographic variables included gender, marital status, occupation, domicile and area of residence.

The online self-reported questionnaire developed by the investigators contained the variables related to mental distress faced during the pandemic of the novel corona virus.

STATISTICAL ANALYSIS

Descriptive statistics were calculated for socio-demographic characteristics and psychological symptoms. SPSS software version 23 was used to carry out analysis. Cross tabulation and Chi Square Test were used to draw meaningful conclusion with a significance level of $p < 0.05$.

RESULTS

Out of the 500 people to whom online questionnaire was distributed, only 77.2% (386) filled the questionnaire. Out of these 386 samples 59% (229) were male and 41% (157) were female. The majority (66%) of the respondents was married. Most of the respondents (79%) were living with family while just 21% were living alone. Finally, with respect to the status of the occupation, around one third (32.3%) of the respondents were not working due to the outbreak, nearly 42% were working from home and about 16% providers went to work being a part of essential services. Very few (5.1%) were homemaker while just about five % were students.

Mental distress due to COVID-19 outbreak and lockdown

Approximately 15% of the participants were feeling tired during lockdown. About 38% of participants reported being bored while nearly half (44.6%) reported being worried for themselves and their close ones during the ongoing pandemic. Approximately, 22 % of the participants experienced sleeping difficulty or insomnia. Among the participants, one fourth (26.9%) had reported low enthusiasm due to lockdown. Around one third (32.4%) of the participants accepted that they felt irritated. A total of 35.5 % of participants reported that they think too much about pandemic and the financial situation of the family. In the study, nearly one fourth (24.3%) of the people felt restless due to lockdown restrictions, about 28% participants reported being stressed while 36% participants stated that they didn't have any problem.

Table 1: Responses related to mental distress due to COVID-19 outbreak and lockdown

Characteristics	No.	Percentage
Feel tired	58	15
Feel bored	148	38.3
Feel worried (Anxiety)	172	44.6
Insomnia	85	22
Low enthusiasm	104	26.9
Feel irritated	125	32.4
Over think	137	35.5
Feel restless	94	24.3
Feel stressed	109	28.2
Didn't have any problem	139	36

Gender and mental distress due to COVID-19 outbreak and lockdown

There is a significant association between gender and some of the responses, including "feel tired during lockdown" (P=0.0002); "feel bored at home" (P=0.02); "feel irritated" (P=0.004); "feel restless" (P=0.003) and "feel stressed due to the COVID-19 pandemic" (P = 0.03). However, there is no association between gender and responses, including "feel worried", "insomnia", "low enthusiasm" and "over thinking".

Marital status and mental distress due to COVID-19 outbreak and lockdown

There is a significant association between marital status of respondents and some of the responses, including "feel bored at home" (P=0.01); "feel worried" (P=0.0005); "insomnia" (P=0.00001); "low enthusiasm" (P=0.014); "feel irritated" (P=0.01) and "feel restless" (P=0.007) during COVID-19 pandemic, however, there is no association between marital status and responses, including "feel tired at home", "over thinking" and "feel stressed".

Status of living and mental distress due to COVID-19 outbreak and lockdown

There is a significant association between status living of respondents and some of the responses, including "feel tired at home" (P=0.00015); "feel bored at home" (P=0.00004); "feel worried" (P=0.00017); "insomnia" (P=0.00001); "feel irritated" (P=0.009); "over thinking" (P=0.00001) and "feel restless"

(P=0.034) during COVID-19 pandemic, however, there is no association between status of living and responses, including "low enthusiasm" and "feel stressed".

Table 2: Association between gender and mental distress due to 2019 Corona virus disease outbreak

Variables	Male (n=229)	Female (n=157)	P-value
Feel tired at home, n (%)			
Yes	47 (20.5)	11 (7)	0.0002*
No	182 (79.5)	146 (93)	
Feel bored at home, n (%)			
Yes	98 (42.7)	50 (31.8)	0.02*
No	131 (57.3)	107 (68.2)	
Feel worried, n (%)			
Yes	99 (43.2)	74 (47.1)	0.44
No	130 (56.8)	83 (52.9)	
Insomnia, n (%)			
Yes	52 (22.7)	33 (21)	0.69
No	177 (77.3)	124 (79)	
Low enthusiasm, n (%)			
Yes	56 (24.4)	48 (30.5)	0.18
No	173 (75.6)	109 (69.5)	
Feel irritated, n (%)			
Yes	87 (37.9)	38 (24.2)	0.004*
No	142 (62.1)	119 (75.8)	
Over think, n (%)			
Yes	82 (35.8)	55 (35)	0.87
No	147 (64.2)	102 (65)	
Feel restless, n (%)			
Yes	68 (29.6)	26 (16.5)	0.003*
No	161 (70.4)	131 (83.5)	
Feel stressed, n (%)			
Yes	74 (20.5)	35 (22.2)	0.03*
No	155 (79.5)	122 (77.5)	

Table 3: Association between marital status of respondents and mental distress due to 2019 Corona virus disease outbreak

Variables	Married (n=256)	Unmarried (n=130)	P-value
Feel tired at home, n (%)			
Yes	39 (15.2)	19 (14.6)	0.87
No	217 (84.8)	111 (85.4)	
Feel bored at home, n (%)			
Yes	132 (51.5)	50 (38.4)	0.01*
No	124 (48.5)	80 (61.6)	
Feel worried, n (%)			
Yes	130 (50.7)	42 (32.3)	0.0005*
No	126 (49.7)	88 (67.7)	
Insomnia, n (%)			
Yes	67 (26.1)	18 (13.8)	0.00001*
No	189 (73.9)	112 (86.2)	

Low enthusiasm, n (%)			
Yes	79 (30.8)	25 (19.2)	0.014*
No	177 (69.2)	105 (80.8)	
Feel irritated, n (%)			
Yes	94 (36.7)	31 (23.8)	0.01*
No	162 (63.3)	99 (76.2)	
Over think, n (%)			
Yes	89 (34.7)	48 (36.9)	0.6
No	167 (65.3)	82 (63.1)	
Feel restless, n (%)			
Yes	73 (28.5)	21 (16.1)	0.007*
No	183 (71.5)	109 (83.9)	
Feel stressed, n (%)			
Yes	72 (28.1)	37 (28.4)	0.9
No	184 (71.9)	93 (71.6)	

Table 4: Association between respondents' status of living and mental distress due to 2019 Corona virus disease outbreak

Variables	Living with family (n=305)	Living alone (n=81)	P-value
Feel tired at home, n (%)			
Yes	35 (11.4)	23 (28.3)	0.00015*
No	270 (88.6)	58 (71.7)	
Feel bored at home, n (%)			
Yes	101 (31.8)	47 (62.9)	0.00004*
No	204 (68.2)	34 (37.1)	
Feel worried, n (%)			
Yes	121 (39.6)	51 (62.9)	0.00017*
No	184 (60.4)	30 (37.1)	
Insomnia, n (%)			
Yes	51 (16.7)	34 (41.9)	0.00001*
No	254 (83.3)	47 (58.9)	
Low enthusiasm, n (%)			
Yes	79 (25.9)	25 (30.8)	0.37
No	226 (74.1)	56 (69.8)	
Feel irritated, n (%)			
Yes	89 (29.1)	36 (44.4)	0.009*
No	216 (70.9)	45 (55.6)	
Over think, n (%)			
Yes	86 (28.1)	51 (62.9)	0.00001*
No	219 (71.9)	30 (37.1)	
Feel restless, n (%)			
Yes	67 (21.9)	27 (33.3)	0.034*
No	238 (78.1)	54 (66.7)	
Feel stressed, n (%)			
Yes	87 (28.5)	22 (27.1)	0.8
No	218 (71.5)	59 (72.9)	

Status of occupation and mental distress due to COVID-19 outbreak and lockdown

There is a significant association between occupation status of respondents and some of the responses, including "feel bored at home" (P=0.0004); "feel worried" (P=0.00001); "insomnia" (P=0.0008); "low

enthusiasm" (P=0.031); "feel irritated" (P=0.011) and "over thinking" (P=0.0015) during COVID-19 pandemic, however, there is no association between status of living and responses, including "feel tired at home" "feel restless" and "feel stressed".

Table 5: Association between respondents' status of occupation and mental distress due to 2019 Corona virus disease outbreak

Variables	Not working due to lockdown (n=125)	Work from home (n=162)	Work is going on as usual (n=60)	P-value
Feel tired at home, n (%)				
Yes	21 (16.8)	32 (19.7)	10 (16.6)	0.7
No	104 (83.2)	130 (80.3)	50 (83.4)	
Feel bored at home, n (%)				
Yes	59 (47.2)	41 (25.3)	24 (40)	0.0004*
No	66 (52.8)	121 (74.7)	36 (60)	
Feel worried (Anxiety), n (%)				
Yes	65 (52)	39 (24)	17 (28.3)	0.00001*
No	60 (48)	123 (76)	43 (71.7)	
Insomnia, n (%)				
Yes	48 (38.4)	46 (28.3)	7 (11.6)	0.0008*
No	77 (61.6)	116 (71.7)	53 (88.4)	
Low enthusiasm, n (%)				
Yes	39 (31.2)	31 (19.1)	14 (23.3)	0.031*
No	86 (68.8)	131 (80.9)	46 (76.7)	
Feel irritated, n (%)				
Yes	38 (30.4)	27 (16.6)	10 (16.6)	0.011*
No	87 (69.6)	135 (83.4)	50 (83.4)	
Over think, n (%)				
Yes	46 (36.8)	38 (23.4)	8 (13.3)	0.0015*
No	79 (63.2)	124 (76.6)	52 (86.7)	
Feel restless, n (%)				
Yes	22 (17.6)	21 (12.9)	8 (13.3)	0.5
No	103 (82.4)	141 (87.1)	52 (86.7)	
Feel stressed, n (%)				
Yes	29 (23.2)	22 (13.5)	11 (18.3)	0.1
No	96 (76.8)	140 (86.5)	49 (81.7)	

DISCUSSION

Epidemics and pandemics are a periodic in nature. People in the community face some challenges during such periods. The consequences of these epidemics and pandemics are often severe and it could adversely affect the mental well-being of people. The fear and anxiety related to epidemics and pandemics also impact the behaviour of people in the community. All epidemics and pandemics have their unique features in terms of causality, progression and control measures. It is critical to give health education and generate awareness during such situations for effective prevention of disease spread [18]. In our study, we found that the level of anxiety was high in women as compared to their male counterpart. This is similar to the findings of a National Mental Health Survey of India 2016, which suggest that women show higher levels of anxiety as compared to males [19]. In the present study, the stress level was higher in females as compared to males, which is similar to the findings of study by the APA (American Psychiatric Association), 2013 suggested that women are more probably be stressed as compared to their male counterparts [20]. There is a significant

difference (0.03) among gender with regard to Stress. The current study shows that men has problem of sleeping difficulty, irritation and restlessness (symptoms of depression) more as compared to women due to the current Covid-19 crisis. This is similar to the findings of a National Mental Health Survey of India 2016, which suggested that difficulty in sleeping or insomnia, irritating behaviour and restlessness (symptoms of depression) was more prevalent in males than females [19]. This can be attributed to the extension of lockdown and alter in daily routines, work life balance and looming unpredictability in career and job prospects. There is a significant difference among gender with regard to irritation (0.004) and restlessness (0.003).

The people who are not working due to lockdown show more features of anxiety as compared to their employed counterparts. Also, it is found that features of depression like difficulty in sleeping or insomnia, irritation and restlessness were higher in unemployed as compared to their employed counterpart. The study by Iman and Ansari 2018 also showed similar result, i.e. depression and anxiety were high among unemployed individual [21]. This again can be attributed to the changes in daily routine activities and scheduling which impacts the psycho-social functioning of individuals. There is a significant difference between the employability with regard to anxiety (0.00001), insomnia (0.0008) and irritating behaviour (0.011). In the current study, it is clear that the unemployed were more stressful as compared to employed counterpart. However, the findings of Iman and Ansari 2018 suggested that employed individuals were more viable to Stress, which can be attributed to the working environment, work culture, salary, attitude of colleagues etc. This all causes stress or work-related stress. There is no significant difference between the employability and stress. After the declaration of COVID-19, people showed more negative emotions (anxiety, depression, and indignation), which was supported by the theory of BIS, i.e., people did produce more negative emotions for self-protection [22-23]. These results are consistent with earlier studies as well, which showed that public health emergencies (e.g., SARS) triggered a chain of stress emotional response containing a higher level of anxiety and other negative emotions [24-25].

CONCLUSIONS

The study concludes that restrictions imposed due to lockdown during COVID-19 are causing mental distress among the people of India. Individuals have less control of their lives due to lockdown restrictions. The study revealed that mental distress is more among married people, people who were living alone and among people who are not working due to lockdown restrictions. The findings of our study also confirmed the significance of psychological responses. However, these findings would have to be verified through more studies in the bigger population.

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